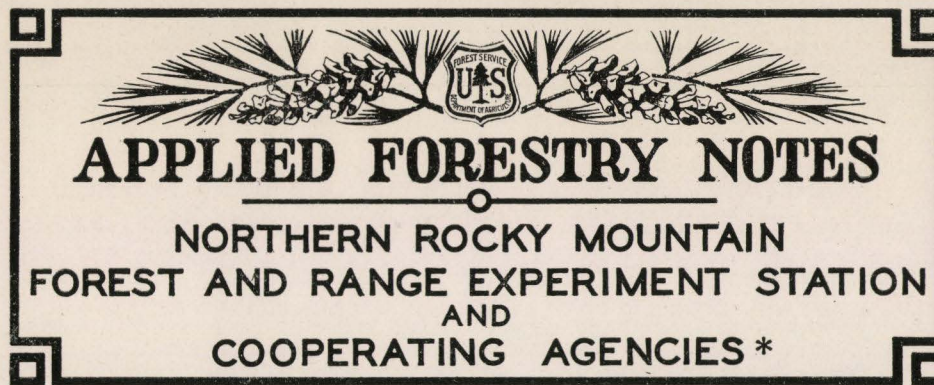


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ROCKY MOUNTAIN STATION

A Comparison of Long-Log and Short-Log Scale.

By C. W. Bloom, Junior Forester

To determine the difference, if any, between the board-foot volume of long logs as scaled in the woods and that of the same logs as scaled after they are cut in the mill into short lengths, a comparison was made on the basis of data obtained in a logging output study on Bob-tail Creek, Kootenai National Forest, Montana. Of the total volume represented by these data, 3 percent was Douglas fir and 97 percent was mature ponderosa pine.

The short log is the standard unit of scaling practice in the Inland Empire, whether volume is measured in tree lengths or in long-log lengths. Short-log lengths range from 10 to 20 feet, varying by 2 feet or multiples thereof. The most common short-log length is 16 feet.

*Forest Service, Region One; University of Montana; Montana State College of Agriculture; University of Idaho; Office of Blister Rust Control; Weather Bureau; Bureau of Entomology, and private agencies.

The long logs from which the study data were derived ranged in length from 24 to 42 feet. At the railroad landing, two scalers made a record of the number of each log and of its gross and net scale. At the sawmill, the lengths and volumes of the short logs obtained from each long log were tallied separately. The length distribution of the short logs was as follows:

<u>Feet</u>	<u>Percent</u>
12	32.4
14	25.8
16	37.3
18	2.7
20	1.8

The short logs averaged 6.8 per 1000 board feet, net, log scale.

The volume differences between long logs scaled as such and the same logs scaled in the form of short logs are indicated by the accompanying table. The volume of the long logs as scaled on the sawmill deck substantially exceeded the volume of the same logs as scaled at the railroad landing. The average excess was 9.3 percent gross scale and 6.6 percent net scale.

If the short-log scale is accepted as standard, this study indicates that long-log scaling tends to show volumes somewhat too low.

VOLUME OF LOGS AS SCALED IN LONG LENGTHS AND
VOLUME OF THE SAME LOGS AS SCALED IN SHORT LENGTHS

Top Diameter of Logs, Inside Bark	Long Logs	Average Volume Per Long Log, as Scaled in Long Lengths at Railroad Landing (Scribner Decimal C Rule)		Total Short Lengths Cut From Long Logs	Average Volume Per Long Log, as Scaled on Sawmill Deck After Being Cut In- to Short Lengths (Scribner Decimal C Rule)		Average Difference in Vol- ume When Long Logs were Scaled as Short Lengths			
		Gross	Net		Gross	Net	Gross		Net	
Inches	Number	Bd. Ft.	Bd. Ft.	Number	Bd. Ft.	Bd. Ft.	Plus %	Minus %	Plus %	Minus %
7	6	53	53	13	73	73	38		38	
8	8	71	71	17	115	110	62		55	
9	18	92	92	41	116	114	26		24	
10	17	122	121	38	149	140	22		16	
11	9	141	135	19	151	132	7			2
12	10	180	175	21	216	197	20		13	
13	12	218	208	25	249	242	14		16	
14	9	238	227	19	271	261	14		15	
15	17	303	303	37	346	341	14		13	
16	5	322	304	10	330	278	2			9
17	14	405	403	30	426	425	5		5	
18	6	413	413	11	411	411		1		1
19	7	490	470	14	540	485	10		3	
20	4	572	572	8	620	620	8		8	
21	2	755	755	5	805	805	7		7	
22	5	642	642	10	662	645	3			
23	7	750	740	14	754	708				4
24	1	980	860	2	800	690		18		20
25	2	900	900	4	900	875				3
26	3	960	960	6	1136	1046	18		9	
27	1	1130	1130	2	1080	1080		4		4
28	1	1190	1190	2	1240	1240	4		4	
29										
30	2	1340	1315	4	1375	1360	3		3	
31	1	1450	1450	2	1440	1440		1		1
Total	167			354						
Average		324	320		354	341	9.3		6.6	